

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT*COMPLIANCE and ENGINEERING***APPLICATION EVALUATION AND CALCULATIONS**

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PERMIT TO CONSTRUCT

COMPANY NAME: BP WEST COAST PRODUCTS LLC

MAILING ADDRESS: P.O. BOX 6210
CARSON, CA 90749EQUIPMENT ADDRESS: 1801 E. SEPULVEDA BLVD.
CARSON, CA 90745

Process 4: FRACTIONATION				
SYSTEM 1: SUPERFRACTIONATION UNIT				S4.3, S4.4, S13.2, S56.1
Equipment	ID No.	Connected to	Emissions and Requirements	Conditions
COLUMN, STABILIZER, NO. 1, DEBUTANIZER, RPV-1035, HEIGHT: 77 FT; DIAMETER: 6 FT 6 IN A/N -478483 499006	D253			
COLUMN, STABILIZER, NO. 2, DEBUTANIZER, RPV-1040, HEIGHT: 117 FT 9 IN; DIAMETER: 6 FT 6 IN A/N -478483 499006	D254			
COLUMN, SOUTH AREA DISOBUTANIZER, RPV-1101, HEIGHT: 127 FT; DIAMETER: 8 FT 6 IN A/N -478483 499006	D255			
COLUMN, STABILIZER, NO. 4, RPV-1117, WITH 40 TRAYS, HEIGHT: 84 FT; DIAMETER: 8 FT A/N -478483 499006	D256			
COLUMN, STABILIZER, NO. 7, RPV-1118, HEIGHT: 62 FT; DIAMETER: 3 FT 6 IN A/N -478483 499006	D257			
COLUMN, NO. 1 NAPHTHA SPLITTLE, RPV-1133, WITH 58 TRAYS, HEIGHT: 112 FT; DIAMETER: 11 FT A/N -478483 499006	D258			
COLUMN, STABILIZER, NO. 9, RPV-1183, HEIGHT: 136 FT; DIAMETER: 12 FT 6 IN A/N -478483 499006	D259			
COLUMN, STABILIZER, NO. 10, RPV-1190, HEIGHT: 110 FT; DIAMETER: 7 FT A/N -478483 499006	D260			
COLUMN, STABILIZER, NO. 11, RPV-1199, HEIGHT: 134 FT; DIAMETER: 8 FT A/N -478483 499006	D261			
COLUMN, NO. 3 DEBUTANIZER, RPV-1208, HEIGHT: 110 FT; DIAMETER: 6 FT A/N -478483 499006	D262			

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ACCUMULATOR, NO.1 DEBUTANIZER, RPV-5574, STABILIZER OVERHEAD; LENGTH: 20 FT; DIAMETER: 5 FT A/N -478483 499006	D263			
TANK, SURGE, NO. 1, DEBUTANIZER FEED, RPV 5573, LENGTH: 40 FT; DIAMETER: 8 FT A/N -478483 499006	D264			
ACCUMULATOR, NO.2 DEBUTANIZER OVERHEAD, RPV-1041, HEIGHT: 18 FT 9.5 IN; DIAMETER: 6 FT A/N -478483 499006	D265		BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003];	H23.12
ACCUMULATOR, RPV-5474, SOUTH AREA DIB OVERHEAD, HEIGHT: 18 FT; DIAMETER: 6 FT A/N -478483 499006	D267			
TANK, SURGE, SOUTH AREA DIB FEED, #5 STABILIZER, RPV-1226, HEIGHT: 30 FT 8 IN; DIAMETER: 10 FT A/N -478483 499006	D268			
ACCUMULATOR, NO. 4 DEBUTANIZER OVERHEAD, RPV-5575, VENTED TO VAPOR RECOVERY SYSTEM, HEIGHT: 20 FT; DIAMETER: 5 FT A/N -478483 499006	D269			
ACCUMULATOR, RPV-1120, LPG VAPORIZER OVERHEAD; LENGTH: 16 FT; DIAMETER: 3 FT A/N -478483 499006	D271			
TANK, FEED SURGE, NO. 258, RPV-1073, NO. 4 DEBUTANIZER FEED, HEIGHT: 32 FT 6 IN; DIAMETER: 10 FT A/N -478483 499006	D270			
TANK, SURGE, RPV 1181, NO. 3 DEBUTANIZER FEED, HEIGHT: 32 FT; DIAMETER: 9 FT A/N -478483 499006	D272			
ACCUMULATOR, NO.9, RPV-1185, STABILIZER REFLUX, LENGTH: 16 FT; DIAMETER: 6 FT A/N -459256 478483	D274			
DRUM, KNOCK OUT, WEST, RPV 1185, SOUTH AREA FLARE, LENGTH: 15 FT 8 IN; DIAMETER: 6 FT A/N -478483 499006	D274			
ACCUMULATOR, NO.10, RPV-1189, STABILIZER OVERHEAD, LENGTH: 7 FT 11.5 IN; DIAMETER: 6 FT A/N -459256 478483	D275			
ACCUMULATOR, NO.9, RPV-1189A, STABILIZER OVERHEAD, LENGTH: 15 FT 8 IN; DIAMETER: 6 FT A/N -459256 478483	D276			
DRUM, KNOCK OUT, EAST, RPV 1189, SOUTH AREA FLARE, LENGTH: 15 FT 8 IN; DIAMETER: 6 FT A/N -478483 499006	D275			
ACCUMULATOR, RPV-1639, DEBUTANIZER OVERHEAD; LENGTH: 12 FT; DIAMETER: 6 FT A/N -478483 499006	D277		BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
TANK, SURGE, RPV 1182, #10 STABILIZER FEED, LENGTH: 32 FT; DIAMETER: 9 FT A/N -478483 499006	D278			

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TANK, SURGE, RPV 1180, #11 STABILIZER FEED, LENGTH: 32 FT; DIAMETER: 9 FT A/N -478483 499006	D280			
ACCUMULATOR, RPV-1205, NO. 11 STABILIZER OVERHEAD;; LENGTH: 16 FT; DIAMETER: 6 FT A/N -478483 499006	D281			
ACCUMULATOR, RPV-1213, NO.3 DEBUTANIZER OVERHEAD; LENGTH: 16 FT; DIAMETER: 6 FT A/N -478483 499006	D282			
POT, RPV 2092, LPG VAPORIZER CONDENSATE, HEIGHT: 4 FT; DIAMETER: 2 FT A/N -478483 499006	D283			
TOWER, DEBUTANIZER, (RPV-1638), HEIGHT: 76 FT 8 IN; DIAMETER: 7 FT A/N -478483 499006	D284			
KNOCK OUT POT, RW 5511, NO. 3 DEBUTANIZER OVERHEAD ACCUMULATOR, HEIGHT: 3 FT; DIAMETER: 1 FT 11 IN A/N -478483 499006	D2894		BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
KNOCK OUT POT, RW 5512, NO. 3 DEBUTANIZER FEED SURGE DRUM, HEIGHT: 3 FT; DIAMETER: 1 FT 11 IN A/N -478483 499006	D2895		BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
KNOCK OUT POT, RW 5513, NO. 1 DEBUTANIZER ACCUMULATOR, HEIGHT: 3 FT; DIAMETER: 1 FT 11 IN A/N -478483 499006	D2896		BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
KNOCK OUT POT, RW 5514, NO. 2 DEBUTANIZER ACCUMULATOR, HEIGHT: 3 FT; DIAMETER: 1 FT 11 IN A/N -478483 499006	D2897		BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
KNOCK OUT POT, RW 6336, DIB FEED SURGE DRUM, HEIGHT: 2 FT; DIAMETER: 1 FT A/N -478483 499006	D2898			
KNOCK OUT POT, RPV 4342, HEIGHT: 3 FT 6 IN; DIAMETER: 1 FT A/N -478483 499006	D2628		BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
TOWER, DEHEXANIZER NO.1, RPV-5665, STRAIGHT RUN NAPHTHA, HEIGHT: 144 FT 11 IN; DIAMETER: 13 FT 3 IN A/N -478483 499006	D1364			
ACCUMULATOR, RPV-5666, NO.1 DEHEXANIZER OVERHEAD; LENGTH: 30 FT; DIAMETER: 9 FT A/N -478483 499006	D1365			
KNOCK OUT POT, RPV 5667, NO. 1 DEHEXANIZER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -478483 499006	D1366			
TOWER, DEHEXANIZER NO.2, RPV-5678, STRAIGHT RUN NAPHTHA, HEIGHT: 144 FT 11 IN; DIAMETER: 13 FT 3 IN A/N -478483 499006	D1367			

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ACCUMULATOR, RPV-5679, NO.2 DEHEXANIZER OVERHEAD; LENGTH: 30 FT; DIAMETER: 9 FT A/N -478483 499006	D1368			
KNOCK OUT POT, RPV 5680, NO. 2 DEHEXANIZER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -478483 499006	D1369			
KNOCK OUT POT, RPV 5708, NO. 1 NAPHTHA SPLITTER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 5 IN A/N -478483 499006	D1372			
KNOCK OUT POT, RPV 5712, NO. 2 DEBUTANIZER REBOILER CONDENSATE, LENGTH: 1 FT 9 IN; DIAMETER: 1 FT 6 IN A/N -478483 499006	D1373			
TANK, FLASH, RPV 5713, NO. 1 DEHEXANIZER REBOILER, LENGTH: 16 FT 6 IN; DIAMETER: 6 FT A/N -478483 499006	D1374			
TANK, FLASH, RPV 5714, NO. 2 DEHEXANIZER REBOILER, LENGTH: 16 FT 6 IN; DIAMETER: 6 FT A/N -478483 499006	D1375			
TANK, FLASH, RPV 5715, DEHEXANIZER, LENGTH: 21 FT; DIAMETER: 6 FT A/N -478483 499006	D1376			
KNOCK OUT POT, RPV 5716, NO. 2 DEHEXANIZER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -478483 499006	D1377			
KNOCK OUT POT, RPV 5717, NO. 1 DEHEXANIZER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -478483 499006	D1378			
TANK, FLASH, RPV 5718, 150 LB STEAM, LENGTH: 13; DIAMETER: 5 FT A/N -478483 499006	D1379			
TANK, FLASH, RPV 5719, NAPHTHA SPLITTER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -478483 499006	D1380			
TANK, FLASH, RPV 5733, 25 LB STEAM, LENGTH: 19 FT 6 IN; DIAMETER: 6 FT A/N -478483 499006	D1381			
VESSEL, SEPARATE, RPV 5734, HC CONDENSATE, LENGTH: 6 FT; DIAMETER: 6 FT A/N -478483 499006	D1382			
VESSEL, SEPARATOR, RW-6191, COALESCING OIL, HEIGHT: 5 FT; DIAMETER: 5 FT 3 IN A/N -478483 499006	D2899			
VESSEL, SEPARATOR, RW-6192, BULK OIL, HEIGHT: 10 FT; DIAMETER: 6 FT A/N -478483 499006	D2900			
KNOCK OUT POT, RPV 5735, COKER GAS FRACTIONATION DEHEXANIZER REBOILER CONDENSATE, LENGTH: 2 FT; DIAMETER: 1 FT 6 IN A/N -478483 499006	D1383			

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KNOCK OUT POT, RPV 5736, COKER GAS FRACTIONATION SWING REBOILER CONDENSATE, LENGTH: 2 FT; DIAMETER: 1 FT 6 IN A/N -478483 499006	D1384			
KNOCK OUT POT, RPV 5780, DEHEXANIZER FLARE, LENGTH: 10 FT; DIAMETER: 5 FT A/N -478483 499006	D1385		BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
SCRUBBER, RPV 1293, SFIA FUEL GAS, HEIGHT: 30 FT; DIAMETER: 3 FT 4 A/N -478483 499006	D287			
VESSEL, EAST VAPOR RECOVERY BLOWCASE, RW-713, HEIGHT: 4 FT 4 IN; DIAMETER: 2 FT A/N -478483 499006	D2901			
FUGITIVE EMISSIONS, MISCELLANEOUS A/N -478483 499006	D2476		HAP: (10) [40CFR 63 Subpart CC, #5A, 6-23-2003]	H23.3
SYSTEM 2: NAPHTHA SPLITTER UNIT				S46.1, S46.2, S13.2, S56.1
Equipment	ID No.	Connected to	Emissions and Requirements	Conditions
TANK, SURGE, RPV 1241, NAPHTHA SPLITTER FEED, HEIGHT: 26 FT 6 IN; DIAMETER: 7 FT 6 IN A/N -395646 501926	D290			
ACCUMULATOR, RPV-1238, NO. 2 NAPHTHA SPLITTER OVERHEAD; HEIGHT: 20 FT; DIAMETER: 7 FT 6 IN A/N -395646 501926	D291			
TOWER, RPV-1234, NO. 2, NAPHTHA SPLITTER, HEIGHT: 72 FT 8 IN; DIAMETER: 10 FT A/N -395646 501926	D1400			
KNOCK OUT POT, RPV 5517, NO. 2 NAPHTHA SPLITTER FEED SURGE WATER, HEIGHT: 2 FT 8 IN; DIAMETER: 1 FT 2 IN A/N -395646 501926	D1401			
KNOCK OUT POT, RPV-5516, NO. 2 NAPHTHA SPLITTER OVERHEAD ACCUMULATOR WATER, LENGTH: 2 FT 11 IN; DIAMETER: 1 FT 2 IN A/N -395646 501926	D1402		BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
KNOCK OUT POT, RPV 5719, NO. 2 NAPHTHA SPLITTER REBOILER CONDENSATE WATER, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -395646 501926	D1403			
FUGITIVE EMISSIONS, MISCELLANEOUS A/N -395646 501926	D2474		HAP: (10) [40CFR 63 Subpart CC, #5A, 6-23-2003]	H23.3
Process 21: AIR POLLUTION CONTROL PROCESS				
SYSTEM 1: SOUTH AREA FLARE SYSTEM				S56.1, S58.2, S31.10
FLARE, ELEVATED WITH STEAM INJECTION, NATURAL GAS, WITH 3 PILOT ASSEMBLIES, TIE-IN LINE TO FCCU FLARE FROM THE SOUTH UNITS, DIA: 3 FT, HEIGHT: 203 FT 6 IN A/N: 484937 499007 BURNER, JOHN ZINK, MODEL STF-S-24	C1302	D809, D815	CO: 2000 PPMV (5) [RULE 407, 04/02/82]; PM: 0.10 GRAINS/SCF (5) [RULE 409, 08/07/81]	D12.15, D323.1, E193.3, H23.12, H23.29

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KNOCK OUT POT, RPV-0417, DIA: 5 FT, HEIGHT: 7 FT A/N: 484937 499007	D2795			
KNOCK OUT POT, FLARE STACK, DIA: 108 IN, HEIGHT: 258 IN A/N: 484937 499007	D1303			
KNOCK OUT POT, RPV-303, SOUTH AREA FLARE PRIMARY, DIA: 10 FT, LENGTH: 40 FT A/N: 484937 499007	D1304			
DRUM, WATER SEAL, RW 6989, LENGTH: 25 FT, DIAMETER: 13 FT A/N: 484937 499007	D2796			
KNOCK OUT POT, SOUTH FLARE LINE, RPV-1994, DIA: 1 FT 4 IN, HEIGHT: 5 FT 9 IN A/N: 484937 499007	D2809			
KNOCK OUT POT, NORTH FLARE LINE, RPV-1993, DIA: 1 FT 4 IN, HEIGHT: 5 FT 9 IN A/N: 484937 499007	D2810			
AUTOPUMP, SOUTH AREA FLARE, RW 6876-289.09, DIA: 1 FT, HEIGHT: 3 FT 11 IN A/N: 484937 499007	D2863			
AUTOPUMP, SOUTH AREA FLARE, RW 6877-289.09, DIA: 1 FT, HEIGHT: 3 FT 11 IN A/N: 484937 499007	D2864			
FUGITIVE EMISSIONS, MISCELLANEOUS A/N: 484937 499007	D2542		HAP: (10) [RULE 63SUBPART CC; #5A, 6-23-2003]	H23.3

BACKGROUND

Application 499006 was submitted for the modification of Superfractionation Unit. This modification is proposed to convert three out-of-service accumulators, D274, D275 and D276 to knock out drums in order to solve the liquid overflow problem in the system. The pressure relief valves of these three drums will be vented to the South Area flare. Also, in this modification, the equipment description will be updated with the requested changes listed in A/N 438918 submitted on 12/21/04. The changes include deleting a demolished device D271 and adding knock out pots and separators, which are parts of the Phase I Reformulated Gasoline project taken place in 1994. (Attachment A).

Application 501926 was submitted for the modifications of the Naphtha Splitter Unit to replace the atmospheric relief valve on the feed surge drum (D290) with a pressure relief valve (PRV) to be vented to the South Area Flare through two knock out drums D274 and D275.

Application 499007 was submitted for the modification of the South Area flare to connect additional tie-ins of the above PRVs to the system flare header.

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Permit history

The permit histories for the above process units and the flare are shown in the following Table 1.

Table 1

A/N	Received Date	Type	Permit Issue Date	Comments
Superfractionation Unit				
499006	5/22/09	Modification		Conversion of three accumulators to two knockout drums and connect PSVs of ko drums to flare system.
478483	2/26/08	Modification	PC issued 9/30/08	Replacing Pressure Relief Valve
459256	8/10/06	Modification	PC issued 7/13/08	Replacing Pressure Relief Valves
438618	12/02/04	Admin Change		Changes on equipment description
395833	12/27/01	Change of ownership		From Arco to BP
376184	10/13/00	Modification	PC issued 7/11/01	CARB RFG Phase III
309522	11/28/95	Modification		
274014	10/19/92	Modification	P/C issued 10/27/93	CARB RFG Phase I
146756	7/22/86	Modification	P/O M58691	
119221	1/19/84	Modification	M47818 1/28/1986	
A39783		Permit to Construct	P25744 5/10/68	Superfractionation Unit
Naphtha Splitter Unit				
501926	9/2/09	Modification		Replacing pressure relief valve of feed surge drum and connect it to the coker flare
395646	12/27/01	Change of ownership		From Arco to BP
274013	10/19/92	Modification		Adding heat ex. and new tower trays as part of Phase I of reformulated fuels program.
150190	11/13/86	Modification	P/O M58839	Naphtha Splitter Unit
South Area Flare System				
499007	5/22/09	Modification		PRVs tie-ins from knock out drums
484937	7/11/08	Modification	PC issued 9/30/08	Adding autopumps and PRVs tie-ins from various sources
478484	2/26/08	Modification	To be cancelled	Adding PRV from feed surge drum in Superfractionation unit
462149	11/01/06	Modification	P/C issued	Adding PRVs from C4 Alkylolation

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			3/23/07	and Iso-Octen units
454566	3/10/06	Modification	P/C issued 3/23/07	To connect to the flare gas recovery system
449757	10/19/05	Modification	P/C issued 1/30/07	Adding PRVs from Mixed Light Ends Loading/Unloading Rack
434527	09/14/04	Modification	P/C issued 7/1/05	Adding vents (Tk-710 project)
427415	03/25/04	Modification		TV clean up
395370	12/27/01	Change of Ownership	P/O F50715	From Arco to BP
C17619		Modification	P/O M43343 04/01/1985	Adding vents
A87575		Modification	P/O P68340 10/27/1976	Adding vents
4148		Permit to Construct	P/O 7087	Initial Construction of the South Area flare

COMPLIANCE RECORD REVIEW

A check of the AQMD Compliance Database for the compliance activity of this facility from 12/01/07 until the present determined that there were no specific violations reported for the Supperfactionation Unit, Naphtha Splitter and the South Area flare. There were 5 notices of violation issued to the refinery for other units as summarized below.

Table 2 – Violation Records as of 12/01/09

Notice No.	Notice Type	Issue Date	Violation Date	Violations
P12137	NOV	6/25/08	6/24/08	BLUE SKY OPERATION R1173 2 COUNT >50K PPM, 4 COUNTS OF OPEN ENDED LINE. R1178 2 COUNT OF NON VAPOT TIGHT HATCHES ON TNKS #1 &17.
P12138	NOV	6/27/08	6/25/08	BLUE SKY OPEREATION R1173(d)(1)(B) >50K PPM 6 COUNT VIOLATION. R1173(d)(1)(E) OPEN ENDED LINE = 1 COUNT VIOLATION. R1178(d)(4)(A)(iii) 2 COUNT NON VAPOR TIGHT HATCH TNK # 192,169. 40CFR SUB PART GGG 6C.692(2)(A)(i) 14 COUNT VIOLATION OF NON-SEAL PROCESS.
P12139	NOV	6/27/08	6/26/08	WASTE WATER SEPARATOR #9 GAP IN SEAL > 1/2" VIOLATED R1176(e)(2)(B) & SP GGG 6c.693.
P39630	NOV	2/24/09	2/23/09	DISCHARGE OF AIR CONTAMINANTS OR OTHER MATERIAL WHICH CAUSE

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				INJURY, DETRIMENT, NUISANCE, OR ANNOYANCE TO ANY CONSIDERABLE NUMBER OF PERSONS.
P39631	NOV	3/10/09	3/4/09	BUILD, ERECT, INSTALL, ALTER OR REPLACE EQUIPMENT WITHOUT FIRST OBTAINING WRITTEN AUTHORIZATION FOR SUCH CONSTRUCTION FROM THE E.O. 2) OPERATE OR USE EQUIPMENT WITHOUT FIRST OBTAINING A WRITTEN PERMIT TO OPERATE FROM THE E.O.

PROCESS DESCRIPTION**Superfractionation Unit:**

The Superfractionation unit fractionates a full range of thermocracked naphtha from the No. 1 and 2 Coker Units into heavy naphtha (dehexanizer bottoms), gasoline (debutanizer bottoms) and a butane and lighter stream (debutanizer overhead).

The dehexanizer removes benzene precursors, mainly alkanes, before feeding naphtha streams to the naphtha splitter. Straight run naphtha streams are either transferred directly from the crude unit as overheads or are conveyed from dehexanizer storage tanks to the dehexanizer tower. The dehexanizer overhead streams (mainly C6's and lighter) are routed through a condenser and a reflux system to increase the efficiency of the desired products. The C6's and lighter products leave the reflux accumulator drum to the debutanizer tower where C4's and lighter products are removed. The naphtha streams free of benzene precursors (mainly C7+) leave the bottom of the tower to enter the Naphtha Splitter or reformer feed storage tanks.

In the previous proposed modification, connecting the feed surge drum's PRV to the coker flare, there is a liquid overflow scenario observed with this connection. To solve this problem, BP proposes adding two knockout drums prior to the flare in order to remove any liquid discharge. BP will convert three existing out-of-service accumulators (D274, D275 & D276) to two knockout drums to serve the purpose. Two accumulators, D275 and D276, currently sharing the same shell with an internal header, will be modified to become one knock out drum. The new PRVs will be installed on these drums and connected to the coker flare system for emergency releases. Also, two new pumps will be installed to return any accumulated liquid from the knockout drums back to the No. 1 Debut feed surge drum.

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Naphtha Splitter Unit

The dehexanizer bottoms are fed into a closed naphtha surge drum and are discharged through heat exchangers into the naphtha splitter towers. The overhead streams from these towers are passed through a heat exchanger where sensible heat is removed by indirect heat transfer with the naphtha splitter feed. The overhead streams are then routed through an air cooler, an accumulator drum, and stored or transferred to the reforming unit. The heavier fraction of the feed (primarily stove oil) leaves the bottom of the naphtha splitter tower to a storage tank.

The naphtha splitter feed surge drum (D290) is used to prevent surges in feed rates entering the naphtha splitter tower (D1400). Currently, the pressure relief device protecting this surge drum from overpressure currently vents to atmosphere. BP proposes to enclose this PRV by connecting it to the coker flare through two newly modified knock out drums, D274 and D275, of the Superfractionation Unit.

South Area Flare (Coker)

This South Area flare is considered an air pollution control device to accommodate releases of emergency vent and process upset gases. This unit currently serves multiple units in the south area of the refinery. The flare was designed for a relief load of 601,000 lb/hr (MW at 63 lb/lbmol) and is subject to emergency releases during common failure scenarios. This flare will be modified to tie-in two PRVs from two knock out drums in the Superfractionation unit, which also will carry a load can be released from the naphtha splitter feed surge drum in the naphtha splitter unit.

Coker flare was chosen for the above tie-ins because of the proximity of connected equipment and the ability to coordinate shutdown of the flare with equipment vented to the flare. Most importantly, this flare at design capacity of 601,000 lb/hr (MW 63 lb/lbmol) will adequately handle the worst possible discharge rate of 34,875 lb/hr from the naphtha feed surge drum, D290, when it has a fire. The attached flare analysis showed that this potential relief is not part of the common failure scenario, e.g. power, cooling tower, steam failure or fire; therefore, the loads from the additional new PSVs is not additive to the other fire circles nor any other flaring event associated with the Coker flare; hence, there will be no impact on the capacity of the flare.

Other design criteria are also in satisfaction:

PRVs from D274 & D275

- Flare tip gas velocity – the flare tip velocity for a release from proposed PRV is at Mach 0.007 which is well below the manufacturer's recommended maximum of Mach 0.22.
- Back pressure - the calculated back pressure of 6 psig at this new PRV during a capacity release will not affect the capacity of any other relief valve in the Coker flare system.

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- Thermal radiation - the maximum thermal radiation resulting from this PRV release is 175 btu/hr ft² at 185 ft from the flare. This radiation level is well below the API recommended maximum radiation level of 1500 Btu/ft² hr, for areas where emergency action lasting 2 to 3 minutes. They might allow personnel entering without shielding but with appropriate clothing.
- The flare KO drum and pump are adequate to handle the additional vapor and liquid flows - the expected release for all the vapor relief valves listed above is much less than the flare capacity, the flare KO drum is adequate to handle the releases.

PRV from D290

- Flare tip gas velocity – the flare tip velocity for a release from proposed PRV is at Mach 0.13 which is well below the manufacturer's recommended maximum of Mach 0.22.
- Back pressure - the calculated back pressure of 12.9 psig at this new PRV during a capacity release will not affect the capacity of any other relief valve in the Coker flare system.
- Thermal radiation - the maximum thermal radiation resulting from this PRV release is 286 btu/hr ft² at 131 ft from the flare. This radiation level is well below the API recommended maximum radiation level of 1500 Btu/ft² hr, for areas where emergency action lasting 2 to 3 minutes. They might allow personnel entering without shielding but with appropriate clothing.
- The flare KO drum and pump are adequate to handle the additional vapor and liquid flows-the expected release from the vapor relief valve listed above is much less than the flare capacity, the flare KO drum is adequate to handle the releases

EMISSIONS CALCULATION:

Fugitive emissions are the main concerned air contaminant resulting from the proposed modification of the above process units. The baseline emission of the Superfractionation unit was revised to reflect the actual condition in the field. Per BP, the revision includes the removals of components associated with the flare knockout pot, D2739, of Process 1, System 1 which were mistakenly included in this Process 4, System 1. Details are provided in the attached email dated 11/25/09.

The proposed modifications cause a small net increase in VOC emissions from the additional components to the process units as detailed in Table 3 and 4 below.

Table 3 - Fugitive Emissions for Superfractionation Unit

Sources	Nos. of Existing Sources*	# Compts Removed	# Compts Added	Final Compts Count	Emission Factor (lb/yr)	Net Change in VOC's	After Modif Emission (lb/yr)
Valves							
Sealed bellows-Gas/V & L Liquid	671		88	759	0		
Live loaded w/dual seal syst: Nat gas			1	1	12	12	12

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Gas Vapor	325		6	331	23	138	463
Light Liquid	2532	2	1	2531	19	-19	48089
Heavy Liquid					3		

Pumps Sealess type - LL					0		
Double or Tandem Mech. Seal – LL	48		2	50	104	208	5200
Single Mech. Seal (HL)					80		
Fittings (flanges, conntns and others)	17978	5	162	18140	1.5	243	27210
Process Drains - P-Trap or Seal Pot	262			262	80		20960
PRVs	48		2	50	0		
Total ROG emissions	101,934 /yr 281.55 lb/ 30-dy ave					582 lb/yr or 1.62** lb/day	101,934 /yr or 283.15 lb/ 30-day Ave.

* Baseline emissions based on the updates provided by BP, email dated 11/25/09.

** Toxic air contaminants (TAC) in 1.62 lb/day VOC increase, using gasoline content:

TAC	Weight %	Emission lb/hr	Tier I SEL @ 25 m, Chronic lb/hr	Tier I SEL @ 25 m, Acute lb/hr	Comments
Benzene	1.8	0.0288	1.14	0.73	below SEL
Toluene	7	0.112	9.92E03	1.85E01	below SEL
Xylene	7	0.112	2.31E04	1.1E01	below SEL
Ethyl benzene	1.8	0.022	6.61E04	N/A	below SEL

Table 4 - Fugitive Emissions for Naphtha Splitter Unit

Sources	Nos. of Existing Sources*	# Compts Removed	# Compts Added	Final Compts Count	Emission Factor (lb/yr)	Net Change in VOC's	After Modif Emission (lb/yr)
Valves							
Sealed bellows-Gas/V & L Liquid	46	1	9	54	0		
Live loaded w/dual seal syst: Nat gas					12		
Gas Vapor	9		1	10	23	23	230
Light Liquid	221			221	19		4199
Heavy Liquid					3		
Pumps Sealess type - LL					0		
Double or Tandem Mech. Seal – LL	7			7	104		728
Single Mech. Seal (HL)					80		
Fittings (flanges, conntns and others)	948	1	12	959	1.5	16.5	1438.5
Process Drains - P-Trap or Seal Pot					80		
PRVs	5	1	1	5	0		
Total ROG emissions	6556 lb/yr 18.21 lb/ 30-dy ave					39.5 lb/yr or 0.11 lb/day	6595.5 /yr or 18.32 lb/ 30-day Ave.

* Baseline emissions based on the updates provided by BP.

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Table 5 - Flare Emissions

There will be no changes in the flare emissions. The baseline emissions listed in previous A/N 484937 will be used in this application as shown in the table below.

Emission	CO (lb/yr) (lb/day)	ROG (lb/yr) (lb/day)	NOx (lb/yr) (lb/day)	PM (lb/yr) (lb/day)	SOx (lb/yr) (lb/day)
◦ Combustion	5555 15.36	946 2.60	1021 2.89	339 0.96	6055 16.56
◦ Fugitive		19.10			
Total	15.36	21.70	2.89	0.96	16.56

RULE REVIEW**Part 1 District Rules****Rule 212 - Standards for Approving Permits**

The proposed modifications to the Superfractionation Unit and Naphtha Splitter Unit meet all criteria in Rule 212 for permit approval. The modifications are designed so that the unit can emit a lower emission level during emergency situations.

The replacement of atmospheric PRV with enclosed PRV does not constitute a significant project because 1) the modified permit unit is not located within 1000 feet of a school; 2) the estimated emission increase will not exceed paragraph (g)'s threshold; 3) the modified permit unit does not have an increase cancer risk greater than, or equal to, one in a million (1×10^{-6}) during a lifetime of 70 years or pose a risk of nuisance.

Rule 401 & 402 - Visible Emissions & Nuisance

Visible emission violations and public nuisance complaints associated with the above project are not expected under normal operating conditions.

Rule 467 - Pressure Relief Devices

The new pressure relief valves (PRV) on the knockout drums and surge drum are the emergency pressure relief valves. PRVs to relief overpressure condition are exempt from this rule as specified by paragraph (g)(3). Therefore, this rule is not applicable to the proposed PRV. However, these new PRV will be subject to the applicable inspection, maintenance and recordkeeping requirements specified by Rule 1173.

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Rule 466.1 - Valves and Flanges

The new valves and flanges will be equipped BACT and subject to the applicable inspection, maintenance and recordkeeping requirements specified by Rule 1173. The permit unit is expected to comply with this rule.

Rule 1118 Control of Emissions from Refinery Flares

1118(c)(4) requires that by January 1, 2007, all flares be operated in such a manner that minimizes all flaring and that no vent gas is combusted except during emergencies, shutdowns, startups, turnarounds or essential operational needs. This effective date is moved back to January 1, 2009 as the facility will install a flare gas recovery system to comply with this requirement. PC for this project was issued in March 23, 2007.

This project allows the facility's flares to comply with the operational requirements of paragraph (c)(4). The above flare will be connected to a gas recovery system. Compliance with this Rule 1118 is expected.

Rule 1123 - Refinery Process Turnarounds

The refinery is subject to the requirements of this rule during a process turnaround. BP refinery is required to submit a compliance plan to the AQMD for review and approval if the refinery uses inert gases or vacuum education in the process turnaround. Since the process will not undergo turnaround at this time, this rule is not applicable to the process unit. The permit unit is expected to comply with this rule in future process turnarounds.

Rule 1173 - Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

The process is equipped with valves, flanges, pumps, pressure relief devices (PRDs), drains, diaphragms, hatches, sigh-glasses and meters in VOC service. Therefore, these components are subject to the following applicable requirements:

Leak standards: the new components will be equipped with BACT; hence, they are expected to comply with the requirements specified in this paragraph.

Identification: all new major components (>4 in valves and PRDs and >5 HP pumps) will be identified in Piping and Instrumentation (P&ID) flow diagrams.

Inspection: BP will continue to inspect the components in accordance to the applicable requirements specified by this paragraph.

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Maintenance: BP will continue to repair or replace components in accordance to the time table specified by Table 2 of this paragraph.

Atmospheric PRDs: all atmospheric PRDs in the process unit are listed in the compliance plan application submitted as required by this paragraph. Compliance with the monitoring requirements is expected.

Recordkeeping and reporting: BP will continue keeping records and report of all leaks, repairs and re-inspections in accordance to the applicable requirements specified by this paragraph.

BP is expected to comply with all applicable requirements of this rule.

Reg. XIII - New Source Review:

This regulation applies to any new, modified or relocated source which results in an emission increase of any non-attainment air contaminant, any ozone depleting compound, or ammonia.

Rule 1303(a)(1) – BACT:

Superfractionation Unit: the proposed modification to this system will result in an emission increase of 1.61 lb/day of VOC emissions. BACT is required. BP will install 88 bellow sealed valves (BSV) in gas/vapor and light liquid application, and the PRVs are connected to a closed vent system. Naphtha Splitter Unit: the proposed replacement of atmospheric pressure relief valve with the enclosed pressure relief valve will not result in a significant emission increase. BACT is not required. However, for this project, BP will install bellow sealed valves (BSV) in gas/vapor and light liquid application to keep the fugitive emission below the baseline emissions shown in Emissions Calculations.

Rule 1303(b) - Modeling and Emission Offsets:

For Superfractionation unit, ERCs will be provided for the mission increase of 1.61 lb/day of VOC. Based on an offset ratio of 1.2, BP is required to supply 2 lbs of ERC ROG/day. Modeling is not required for VOC emissions.

The previous A/Ns and NSR emissions of the process units are required to be adjusted as shown in the Table 6 below. (Details can be found in the Emission Calculations section above)

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Table 6 - NSR Emissions

Equipment	NSR ROG Emissions – lb/day	
	Previous	Current
Superfractionation	A/N 478483: -0 A/N 459256: 281.55	A/N 499006: 283.15
Naphtha Splitter	A/N 395646: -0 A/N 395646: 18.21	A/N 501926: 18.32

Reg. XIV - New Source Review of Carcinogenic Air Contaminants

This rule requires a permit applicant to assess the cancer risk due to the cumulative emission impacts of new/modified sources in the facility. The replacement of PRV will eliminate the atmospheric venting of VOC during the emergency. The only concern in emission is from the additional fugitive components and is estimated to be 1.61 lb/day. As shown in the Emission Section, emissions of TAC are expected to be below the Tier I Screening Levels stated in Table A of the Rule 1401 and 212 Risk Assessment Procedures. Therefore, compliance with the requirements of this rule is assured.

Reg. XVII - Prevention of Significant Deterioration (PSD)

ROG is a non-attainment pollutant. PSD does not apply.

Reg. XX – Regional Clean Air Incentives Market (RECLAIM)

BP Carson refinery is a cycle II RECLAIM facility. There are no emissions of NOx and SOx associated with PRVs replacement. Furthermore, the flare is exempt from the monitoring, reporting, and recordkeeping requirements of this rule. Therefore, this regulation is not applicable to the proposed modification. The facility is expected to continue complying with the requirements of this regulation.

Reg. XXX - Title V Operating Permits

Rule 3002 requires that no person shall construct, modify, or operate equipment located at a Title V facility without first obtaining a Title V permit or permit revision that allows the construction, or modification. This facility is subject to and complies with Title V requirements. On September 1, 2009, BP's initial Title V permit became effective.

This project is considered to be a “De Minimis Significant Revision” which means any Title V revision where the cumulative emission increase of non-RECLAIM pollutants or hazardous pollutants from this permit revision during the term of the permit is not greater than any of the emission

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threshold levels listed in this rule section. The proposed Title V permit revision will be submitted to EPA for a 45-day review.

Part 2 State Regulations

California Environmental Quality Act (CEQA)

This proposed modification is not a significant project. Therefore, preparation of a CEQA document is not required.

Part 3 Federal Regulations

40 CFR Part 60 Subpart A General Provisions

§60.18(c)(1) requires flares to be operated with no visible emissions. Condition D401.1 currently requires specific remedial actions to be taken in the event that visible emissions are observed from the flare. Compliance with this section is expected.

§60.18(f)(2) requires the presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. Condition D12.15 currently on the permit requires the installation of a thermocouple to indicate the presence of a pilot flame. The facility is therefore in compliance with this section.

40 CFR Part 60 Subpart J Standards of Performance for Petroleum Refineries

§60.104(a)(1) limits the H₂S concentration of fuel gas burned in combustion devices to be no more than 160 ppmv. The process upset gases that are combusted in a flare are exempt.

Refinery flares in the South Coast Air Basin are only allowed to operate during periods of process upsets or emergency malfunctions, the conditions that are exempt from the requirements of this subpart. The flares are therefore not subject to this subpart.

40 CFR60 Subpart GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries.

The process unit is subject to the applicable requirements of this subpart.

§60.592(a) requires new devices to comply with section §60.482-1 through §60.482-10.

§60.482-2 defines the inspection and maintenance requirements for pumps in light liquid service. The pumps will also be sealless or tandem sealed

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that comply to BACT of < 500 ppmv ROG emissions. This section is not applicable since there will be no pumps to be installed for this project.

§60.482-3 requires compressors to be equipped with a seal system that includes a barrier fluid. This section is not applicable since there is no compressor to be installed in this project.

§60.482-4 defines the requirements for pressure relief devices in gas/vapor service. This section exempts the PRVs being connected to the control equipment. Since the proposed PRD will be connected to the control equipment, it is exempt from this section requirement.

§60.482-5 defines the requirements for sampling connection systems. This section is not applicable to this project as there will be no sampling systems to be installed.

§60.482-6 requires each open ended valve or line to be equipped with: a cap, blind flange, plug, or a second valve that will be sealed at all times. These standards do not apply as the project will not involve with open ended valve or line.

§60.482-7 defines the inspection and maintenance requirements for valves in light liquid service. The valves to be installed will be included in the facility inspection and maintenance program. Compliance with this section is expected.

§60.482-8 defines the requirements for pumps and valves in heavy liquid service. The new components in heavy liquid service will be equipped with BACT complying to a ROG emission limit of < 500 ppmv, and will be included in the facility inspection and maintenance program. The components are expected to comply with these standards.

§60.482-9 provides allowances for delaying the repair of leaking components. Any repairs of leaked components will be subject to the time limits specified by AQMD Rule 1173 – Table 2 or in this section, whichever is more stringent. The components are expected to comply with the requirements.

§60.482-10 requires flares (control device) to comply with the requirements of §60.18. This section is not applicable since the proposed project does not involve with the flare operation.

BP refinery is expected to comply with all applicable requirements of this subpart.

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40 CFR Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

§63.640(c)(4) indicates that this subpart applies to equipment leaks from petroleum product refining units. This process unit is, therefore, subject to the equipment leak standards for existing sources as specified in §63.648.

§63.648 requires devices subject to this subpart to comply with the equipment leak requirements of 40 CFR60 Subpart VV.

The ability to comply with the requirements of 40 CFR60 Subpart VV is described in the evaluation of 40 CFR60 Subpart GGG in the evaluation. In general, the equipment leak inspection and monitoring requirements of Rule 1173 are more stringent, but pertinent requirements of this regulation have been incorporated into BP's Inspection and Monitoring Program for fugitive emissions.

BP is expected to be in compliance with requirements of this regulation.

CONCLUSION/ RECOMMENDATION:

The above equipment will operate in compliance with all applicable rules and regulations of the District. Permits to Construct are recommended to be issued to BP Carson Refinery subject to the following conditions:

Conditions:

Superfractionation Unit: S4.3, S4.4, S13.2, **S56.1**, H23.3, H23.12.

Naphtha Splitter Unit: S13.2, S46.1, S46.2, **S56.1**, H23.3, H23.12

South Area Flare: S31.10, S56.1, S58.2, D12.15, D323.1, E193.3, H23.3, H23.12, H23.29.

S4.3 THE FOLLOWING CONDITION(S) SHALL APPLY TO ALL AFFECTED DEVICES LISTED UNDER SECTION H OF THIS SYSTEM FOR FUGITIVE EMISSIONS OF VOLATILE ORGANIC COMPOUNDS (VOC):

☐ All open-ended valves shall be equipped with cap, blind flange, plug, or a second valve.

☐ All pressure relief valves shall be connected to closed vent system or equipped with rupture disc.

☐ All sampling connections shall be closed-purge, closed-loop, or closed-vent system.

☐ All process drains shall be equipped with water seal, or a closed vent system and control device complying with the requirements of 40CFR60 Subpart QQQ section 60.692-5.

[RULE 1173, 5-13-1994; RULE 1173, 2-6-2009; 40CFR 60 Subpart QQQ, 10-17-2000]

S4.4 THE FOLLOWING CONDITION(S) SHALL APPLY TO ALL AFFECTED DEVICES LISTED UNDER SECTION H OF THIS SYSTEM FOR FUGITIVE EMISSIONS OF VOLATILE ORGANIC COMPOUNDS (VOC):

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_All components are subject to District Rule 1173 and 40CFR60, Subpart GGG.

_All new components in VOC service as defined in Rule 1173, except valves and flanges shall be inspected quarterly using EPA reference method 21. All new valves and flanges in VOC service except those specifically exempted by Rule 1173 shall be inspected monthly using EPA Method 21.

_All new valves in VOC service shall be of leakless type, except those specifically exempted by Rule 1173 or approved by the District in writing in the following applications: heavy liquid service, control valves, instrument piping/tubing, applications requiring torsional valve stem motion, applications where failures could pose safety hazards (e.g. drain valves with valve stems in horizontal position), retrofits with space limitations, and valves not commercially available.

_For the purpose of this condition, leakless valve shall be defined as any valve equipped with sealed bellow or equivalent as approved in writing by the District prior to installation.

_If 98.0 percent or greater of the new valve and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppm for two consecutive months, then the operator may revert to a quarterly inspection program with the approval of the executive officer. This condition shall not apply to leakless valves.

_All new components in VOC service, a leak greater than 500 ppm but less than 1,000 ppm measured as methane above background as measured using EPA Method 21, shall be repaired within 14 days of detection. Components shall be defined as any valve, fitting, pump, compressor, pressure relief device, diaphragm, hatch, sight-glass, and meter, which are not exempted by Rule 1173.

_The operator shall keep records of the monthly inspection (and quarterly where applicable), subsequent repair, and reinspection, in a manner approved by the District.

_The operator shall provide to the District, no later than 90 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The operator shall also submit a complete, as built, piping and instrumentation diagram(s) and copies of requisition data sheet for all non-leakless type valves with a listing of tag numbers and reasons why leakless valves were not used.

[RULE 1173, 5-13-1994; RULE 1173, 2-6-2009; RULE 1303(A)(1)-BACT, 5-10-1996; 40CFR 60 Subpart GGG, 6-2-2008]

S13.2 All devices under this system are subject to the applicable requirements of the following rules and regulations:

CONTAMINANT	RULE	RULE/SUBPART
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VOC	DISTRICT RULE	1123
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[RULE 1123, 12-7-1990]

S31.10 THE FOLLOWING BACT REQUIREMENTS SHALL APPLY TO VOC SERVICE FUGITIVE COMPONENTS ASSOCIATED WITH THE DEVICES THAT ARE COVERED BY APPLICATION NUMBER(S) 454566, 454567, 454568, 458598, 458600, 458610, 459257, 459284, 459286:

_The operator shall provide to the District, no later than 90 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The valves and flanges shall be categorized by size and service. The operator shall submit a listing of all new non-bellows seal valves which shall be categorized by tag no., size, type, operating temperature, operating pressure, body material, application, and reasons why bellows seal valves were not used

_All new valves in VOC service, except those specifically exempted by Rule 1173 and those in heavy liquid service as defined in Rule 1173, shall be bellows seal valves, except as approved by the District, in the following applications: heavy liquid service, control valve, instrument piping/tubing, applications requiring torsional valve stem motion, applications where valve failure

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could pose safety hazard (e.g., drain valves with valve stems in horizontal position), retrofits/special applications with space limitations, and valves not commercially available

_All new valves and major components in VOC service as defined by Rule 1173, except those specifically exempted by Rule 1173 and those in heavy liquid service as defined in Rule 1173, shall be distinctly identified from other components through their tag numbers (e.g., numbers ending in the letter "N"), and shall be noted in the records

_All new components in VOC service as defined in Rule 1173, except valves and flanges, shall be inspected quarterly using EPA reference Method 21. All new valves and flanges in VOC service, except those specifically exempted by Rule 1173, shall be inspected monthly using EPA Method 21

_If 98.0 percent or greater of the new (non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv for two consecutive months, then the operator may change to a quarterly inspection program with the approval of the District

_The operator shall revert from quarterly to monthly inspection program if less than 98.0 percent of the new (non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv

_All new components in VOC service with a leak greater than 500 ppmv but less than 1,000 ppmv, as methane, measured above background using EPA Method 21 shall be repaired within 14 days of detection. Components shall be defined as any valve, fitting, pump, compressor, pressure relief valve, diaphragm, hatch, sight-glass, and meter, which are not exempted by Rule 1173

_The operator shall keep records of the monthly inspection (quarterly where applicable), subsequent repair, and re-inspection, in a manner approved by the District. Records shall be kept and maintained for at least five years, and shall be made available to the Executive Officer or his authorized representative upon request

_All open-ended valves shall be equipped with cap, blind flange, plug, or a second valve

_All pressure relief valves shall be connected to a closed vent system or equipped with a rupture disc and telltale indicator

_All pumps shall utilize double seals and be connected to a closed vent system

_All compressors to have a seal system with a higher pressure barrier fluid.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-OFFSET, 5-10-1996]

S56.1 VENT GASES FROM ALL AFFECTED DEVICES OF THIS PROCESS/SYSTEM SHALL BE DIRECTED TO A GAS RECOVERY SYSTEM, EXCEPT FOR VENTING FROM THOSE EQUIPMENT SPECIFICALLY INDICATED IN A PERMIT CONDITION, AND FOR THE FOLLOWING VENT GASES WHICH MAY BE DIRECTED TO A FLARE:

1) VENT GASES DURING AN EMERGENCY AS DEFINED IN RULE 1118(B)(2) ;

2) VENT GASES DURING STARTUPS OR SHUTDOWNS AS DEFINED IN RULE 1118(B)(21) AND (B)(19), RESPECTIVELY, PROVIDED THAT ALL FLARES HAVE BEEN OPERATED IN ACCORDANCE WITH FLARING MINIMIZATION PROCEDURES AS DESCRIBED IN RULE 1118(C)(4); AND

3) VENT GAS DUE TO ESSENTIAL OPERATING NEED, AS DEFINED IN RULE 1118(B)(4)(A) THAT WOULD RESULT IN A TEMPORARY FUEL GAS SYSTEM IMBALANCE, OR AS DEFINED IN RULE 1118(B)(4)(C) THAT WOULD RESULT IN STREAMS THAT CANNOT BE RECOVERED DUE TO INCOMPATIBILITY WITH RECOVERY SYSTEM EQUIPMENT OR WITH REFINERY FUEL GAS SYSTEMS, PROVIDED THAT ALL FLARES HAVE BEEN OPERATED IN ACCORDANCE WITH FLARING MINIMIZATION PROCEDURES AS DESCRIBED IN RULE 1118(C)(4).

THE FLARING MINIMIZATION PROCEDURES AND ANY SUBSEQUENT CHANGES SHALL BE SUBMITTED TO THE DISTRICT AS DESCRIBED IN RULE 1118(C)(3).

THIS PROCESS/SYSTEM SHALL NOT BE OPERATED UNLESS ITS DESIGNATED FLARE(S) AND THE GAS RECOVERY SYSTEM ARE BOTH IN FULL USE AND HAVE VALID PERMITS TO RECEIVE VENT GASES FROM THIS SYSTEM.

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Vent gases shall not be released to the atmosphere except from the existing safety devices or relief valves on the following equipment:

Process 1, System 2: 10, 12, 14
Process 1, System 3: 19, 20, 24 to 26
Process 1, System 5: 35, 39, 41, 42, 2726
Process 1, System 6: 43, 49, 57, 58
Process 1, System 7: 59, 60, 61, 62
Process 2, System 1: 74, 77, 2388
Process 2, System 2: 82, 89, 90, 92, 2389
Process 2, System 3: 94, 95
Process 2, System 5: 98, 101, 102
Process 2, System 6: 111, 112, 113
Process 2, System 11: 159, 160
Process 3, System 1: 164 to 167, 170, 172 to 181, 184, 1336 to 1349, 2382, 2387
Process 3, System 2: 186, 188, 189, 191, 196, 199, 201, 204, 1352 to 1355
Process 3, System 4: 241
Process 3, System 6: 242, 245 to 247, 249
Process 3, System 7: 1363
Process 4, System 1: 253 to 256, 262, 265, 268, 270, 272, ~~275 to 277~~, 278, 282, 283, 287, 1364, 1366, 1367, 1372, 1374 to 1376, 1378 to 1381
Process 4, System 2: ~~290~~, 291, 1400 to 1403
Process 4, System 3: 292, 293, 297, 299
Process 4, System 4: 302, 304
Process 4, System 5: 308, 310, 311
Process 4, System 7: 1975 to 1977, 1980, 1981, 1986
Process 5, System 1: 314 to 317, 319, 320, 323 to 332
Process 5, System 2: 335 to 338, 340, 343, 348 to 353
Process 5, System 3: 356, 360, 1413
Process 5, System 4: 401, 406, 407, 412, 414
Process 6, System 1: 426, 427, 429, 431, 434 to 437, 440, 444, 445, 451, 454 to 456, 458, 460
Process 6, System 2: 462, 469, 474 to 481, 483, 486
Process 6, System 3: 490, 494, 495, 498, 501, 503, 506, 507, 509, 510, 512, 513, 518, 520, 521, 525 to 528
Process 7, System 1: 542 to 548, 550, 552 to 558, 560, 562 to 569
Process 7, System 2: 2892, 2893
Process 8, System 1: 583, 584, 593 to 597
Process 8, System 2: 608, 610, 612 to 614, 622, 624
Process 9, System 1: 631, 632, 638 to 652, 659 to 663, 666 to 668, 1482, 1483, 1486 to 1488, 1491, 1493 to 1495, 1497 to 1502, 1528, 1533 to 1536, 2019
Process 9, System 2: 672 to 681, 685
Process 9, System 9: 637, 653, 656, 658, 664
Process 10, System 1: 706
Process 10, System 2: 709, 711 to 715, 720, 721
Process 10, System 3: 725
Process 11, System 1: 730
Process 12, System 1: 756, 759
Process 12, System 2: 760 to 762, 764
Process 12, System 3: 765 to 770
Process 12, System 4: 771, 772, 774
Process 12, System 8: 785, 790, 2365, 2366
Process 12, System 9: 794, 797 to 799
Process 12, System 10: 806
Process 12, System 12: 815, 818
Process 12, System 13: 823, 826, 828
Process 12, System 22: 853, 854
Process 12, System 24: 860, 861, 863, 864, 865
Process 12, System 25: 866, 867, 869, 870, 871, 2003
Process 12, System 27: 873 to 875
Process 15, System 7: 1644 to 1646, 1648, 1649

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Process 16, System 3: 2115 to 2120, 2353, 2394
Process 24, System 1: 1304
Process 24, System 2: 1307
Process 24, System 4: 1315, 1316, 1319, 1323 to 1325, 1659

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2) – Offset, 5-10-1996]

S58.2 SOUTH AREA FLARE SYSTEM SHALL ONLY BE USED TO RECEIVE AND HANDLE VENT GASES FROM THE FOLLOWING PROCESS(ES) AND SYSTEM(S):

- 1) COKING UNITS (PROCESS: 2, SYSTEM: 1 & 2)
- 2) COKER BLOWDOWN FACILITY (PROCESS: 2, SYSTEM: 3)
- 3) COKER GAS COMPRESSION & ABSORPTION UNIT (PROCESS: 2, SYSTEM: 5)
- 4) BLOWDOWN GAS COMPRESSION SYSTEM (PROCESS: 2, SYSTEM: 6)
- 5) COKER GAS TREATING/H₂S ABSORPTION UNIT (PROCESS: 2, SYSTEM: 11)
- 6) FLUID CATALYTIC CRACKING UNITS (PROCESS: 3, SYSTEM: 1, 2 & 3)
- 7) PROPYLENE TETRAMER UNIT (PROCESS: 3, SYSTEM: 6)
- 8) SUPERFRACTIONATION UNIT (PROCESS: 4, SYSTEM 1)
- 9) NAPHTHA SPLITTER UNIT (PROCESS: 4, SYSTEM: 2)
- 10) LIGHT ENDS DEPROPANIZER UNIT (PROCESS: 4, SYSTEM: 3)
- 11) STRAIGHT RUN LIGHT ENDS DEPROPANIZER UNIT (PROCESS: 4, SYSTEM: 4)
- 12) NORTH AREA DEISOBUTANIZER UNIT (PROCESS: 4, SYSTEM: 5)
- 13) COKER GASOLINE FRACTIONATION UNIT (PROCESS: 4, SYSTEM: 7)
- 14) LIQUID RECOVERY UNIT (PROCESS: 4, SYSTEM: 8)
- 15) LIGHT GASOLINE HYDROGENATION UNIT (PROCESS: 5, SYSTEM: 4)
- 16) CATALYTIC REFORMER UNITS (PROCESS: 6, SYSTEM: 1, 2, & 3)
- 17) ALKYLATION UNIT (PROCESS: 9, SYSTEM: 1)
- 18) LINDE ISO-SIV UNIT (PROCESS: 9, SYSTEM: 4)
- 19) ISO-OCTENE UNIT (PROCESS: 9, SYSTEM: 9)
- 20) MDEA REGENERATION UNITS (PROCESS: 12, SYSTEM: 9, 10, 11, 12, & 13)
- 21) NORTH & SOUTH SOUR WATER TREATMENT SYSTEMS (PROCESS: 12, SYSTEM: 14 & 15)
- 22) SULFUR RECOVERY UNITS (PROCESS: 13, SYSTEM: 1, 2, 3, & 4)
- 23) CLAUS TAIL GAS TREATING UNITS (PROCESS: 13, SYSTEM: 5 & 7)
- 24) MIXED LIGHT ENDS TANK CAR LOADING/UNLOADING (PROCESS: 14, SYSTEM: 2)
- 25) REFINERY VAPOR RECOVERY SYSTEM (PROCESS: 21, SYSTEM: 4)
- 26) SOUTH AREA FLARE GAS RECOVERY SYSTEM (PROCESS: 21, SYSTEM: 10)
- 27) NORTH AREA FLARE GAS RECOVERY SYSTEM (PROCESS: 21, SYSTEM: 11)

THE FLARE GAS RECOVERY SYSTEM SHALL BE OPERATED IN FULL USE WHEN ANY OF THE ABOVE PROCESS(ES) AND SYSTEM(S) IS IN OPERATION. FULL USE MEANS ONE OF TWO COMPRESSOR TRAINS (PROCESS 21, SYSTEM 10 AND PROCESS 21, SYSTEM 11) IS ONLINE AT ANY GIVEN TIME, EXCEPT DURING PLANNED STARTUPS OR SHUTDOWNS WHEN BOTH COMPRESSORS TRAINS SHALL BE ONLINE.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-OFFSET, 5-10-1996]

D12.15 THE OPERATOR SHALL INSTALL AND MAINTAIN A(N) INFRARED / ULTRAVIOLET DETECTOR OR A THERMOCOUPLE TO ACCURATELY INDICATE THE PRESENCE OF A FLAME AT THE PILOT LIGHT.

The operator shall also install and maintain a device to continuously record the parameter being measured.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; 40CFR 60 Subpart A, 6-13-2007]

D323.1 THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON A BI-WEEKLY BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE BI-WEEKLY PERIOD. THE ROUTINE BI-WEEKLY INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS.

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IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED THAT LAST MORE THAN THREE MINUTES IN ANY ONE HOUR, THE OPERATOR SHALL VERIFY AND CERTIFY WITHIN 24 HOURS THAT THE EQUIPMENT CAUSING THE EMISSION AND ANY ASSOCIATED AIR POLLUTION CONTROL EQUIPMENT ARE OPERATING NORMALLY ACCORDING TO THEIR DESIGN AND STANDARD PROCEDURES AND UNDER THE SAME CONDITIONS UNDER WHICH COMPLIANCE WAS ACHIEVED IN THE PAST, AND EITHER:

1). TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT; OR

2). HAVE A CARB-CERTIFIED SMOKE READER_ DETERMINE COMPLIANCE WITH THE OPACITY STANDARD, USING EPA METHOD 9 OR THE PROCEDURES IN THE CARB MANUAL "VISIBLE EMISSION EVALUATION", WITHIN THREE BUSINESS DAYS AND REPORT ANY DEVIATIONS TO AQMD.

THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:

- 1). STACK OR EMISSION POINT IDENTIFICATION;
- 2). DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS;
- 3). DATE AND TIME VISIBLE EMISSION WAS ABATED; AND
- 4). ALL VISIBLE EMISSION OBSERVATION RECORDS BY OPERATOR OR A CERTIFIED SMOKE READER.

This condition shall become effective when the initial Title V permit is issued to the facility.
[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 401, 3-2-1984; RULE 401, 11-9-2001]

E193.3 THE OPERATOR SHALL OPERATE AND MAINTAIN THIS EQUIPMENT ACCORDING TO THE FOLLOWING SPECIFICATIONS:

The operator shall comply with all applicable requirements specified in Subpart A of the 40CFR60
[40 CFR 60 Subpart A, 6-13-2007]

H23.3 This equipment is subject to the applicable requirements of the following rules and regulations:

CONTAMINANT	RULE	RULE/SUBPART
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VOC	DISTRICT RULE	1173
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VOC	40CFR60, SUBPART	GGG
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[RULE 1173, 5-13-1994, RULE 1173, 6-1-2007, 40CFR 60 Subpart GGG, 6-2-2008]

H23.12 THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

CONTAMINANT	RULE	RULE/SUBPART
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BENZENE	40CFR61, SUBPART	FF
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[40 CFR 61 Subpart FF, 12-4-2003]

H23.29 THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

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CONTAMINANT	RULE		RULE/SUBPART
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SOX		DISTRICT RULE		1118
[RULE 1118, 11-4-2005]				